

Alternative Minbias Trigger in $d+Au$

Zhangbu Xu

Provide an alternative Minbias Trigger other than BBC
Coincidence to cross check the trigger bias and total
Cross section

Cross Section

Beams	E·W Xsect	Single Xsect	Nucl Xsect
AuAu	10barn	95barn	7barn
dAu	~0.2barn	~2barn	2barn

Background

Beams	E · W	Single Xsect
AuAu	0	10%
dAu	0	~4

Minbias Trigger using ZDC

Trigger Scheme:

1. Using **ZDC East** which is facing the Au beam
2. ZDC TAC uses **CLOCK** as **STOP** and neutron spectators hitting **ZDC** as **START**
3. Select **ZDC EAST TAC** WINDOW to be within **2ns** of collisions happening at TPC center.

To **Veto** the factor of 4 background rate:

1. Require BBC TACs between EAST and WEST to be **inconsistent** with background if there is BBC signals
Beam gas background has: $\text{BBCTAC } |\text{East-West}| = 23\text{ns}$

Since BBC TAC window may be too narrow to include 23ns

Alternative solution:

1. Require BBCs have **no signals** or BBC has **both** ADC signals and TAC signals. (Reject events with BBC ADC signals but without TAC signals::background!!)